

REMARKS

Claims 1-13 are pending in this application. Claims 3, 6 and 8-13 are subject to withdrawal by the Examiner.

Claim 1 is cancelled, claims 2 and 4 are amended and new claims 14-17 are added herein. Amendment of claim 8 is also proposed for entry subject to reconsideration of the restriction and withdrawal of this claim in view of the discussion below.

The drawings are objected to as lacking a prior art legend on Figures 6, 7A and 7B. A Request for Approval of Drawing Changes is submitted herewith to add a prior art legend to Figures 6, 7A and 7B, in view of the Examiner's noted concerns. Accordingly, it is respectfully requested that the objection be withdrawn.

Claim 4 is objected to on informality grounds. Claim 4 is amended as suggested by the Examiner to address the noted concerns. Accordingly, reconsideration of the objection is requested.

Claim 5 stands rejected under 35 U.S.C. §112, first paragraph, as indefinite. The rejection is respectfully traversed.

Antecedent basis for a bulge being in the form of an arc, triangle, or stairs, as recited in claim 5, line 2, is found, for example, on page 8, lines 16-26, of the specification. Accordingly, it is respectfully requested that the rejection be reconsidered and withdrawn.

Claims 1-2 stand rejected under 35 U.S.C. §102(b) as anticipated by Tucker et al. (U.S. Patent No. 4,929,423). Claims 4, 5 and 7 stand rejected under 35 U.S.C. §103(a) as obvious over Kenji et al. (JP Pub. 11-021660), in view of Tucker. Claim 4 is amended to add limitations recited in pending claim 2. Claim 1 is cancelled and claim 2 is amended to be in independent form. Hence, the rejection is moot with respect to claim 1. Except to the extent addressed by the amendment of claim 4, the rejection is respectfully traversed.

In rejecting claim 2, as anticipated by Tucker, the Examiner points to column 1, lines 22-24 as disclosing an alloy composition composed mainly of tin and having the required mass of silver and copper, and to column 1, lines 35-40 as disclosing that the

alloy composition also has the required mass of phosphorus with the balance consisting of tin.

However, the disclosure relied upon in column 1, lines 22-24 describes a prior art alloy composition which is free of bismuth. (See column 1, lines 21-27)

On the other hand, the relied upon disclosure in column 1, lines 35-40 describes the alloy composition which Tucker alleges to have invented. Of particular note is that Tucker's composition requires bismuth and hence, is an entirely different type of composition from that described in column 1, lines 21-27.

As will also be noted, the composition described in column 1, lines 21-27, of Tucker lacks the required amount of phosphorus as originally recited in claim 2 and as now also recited in amended claim 4. The composition described by Tucker as his invention does not include the required mass of silver as recited in original claim 2 and amended claim 4.

Accordingly, Tucker does not disclose an alloy composition having the required masses of phosphorus and silver.

Kenji (which is assigned to the assignee of the present application) is not applied for its teaching of the claimed alloy composition, and it is respectfully submitted that Kenji lacks any such disclosure. Accordingly, Kenji does not cure the defects in Tucker.

It is perhaps also worth noting that, for example, the peel strength can be significantly proved using the claimed alloy composition as compared with compositions, such as that disclosed in column 1, lines 33-40, of Tucker, which contain bismuth. This improvement is, for example, described on page 18, lines 14-19, and in Table 3 of the present application. In view of the above, it is respectfully requested that the rejection of independent claims 2 and 4, and claims 5 and 7 which depend from claim 4, be reconsidered and withdrawn.

New claim 14 is dependent from claim 2 and accordingly, is distinguishable on the foregoing basis. Furthermore, new claim 14 recites that the alloy composition excludes bismuth.

Claims 15-17 recite features which are distinguishable for reasons which are believed to be clear in view of the discussion above.

With regard to the withdrawal of claim 8, it is respectfully submitted that claim 8 as originally filed recited an identical compound as that recited in claim 1, but recited the compound as a connection element within a structure rather than an alloy composition of a lead-free solder as in claim 1. Accordingly, it is respectfully submitted that no further search or analysis is required for the examination of claim 8.

Therefore, it is respectfully requested that the restriction and withdrawal of claim 8 be reconsidered. In anticipation of the reconsideration of the withdrawal of claim 8, an amendment of claim 8 is proposed to modify claim 8 so as to incorporate features recited in claim 2. As amended, claim 8 also distinguishes over the applied prior art, for reasons which should be clear from the above.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed local telephone number, in order to expedite resolution of any remaining issues and further to expedite passage of the application to issue, if any further comments, questions or suggestions arise in connection with the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 01-2135 and please credit any excess fees to such deposit account.

Respectfully Submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



Alfred A. Stadnicki
Registration No. 30,226

Suite 1800
1300 North Seventeenth Street
Arlington, VA 22209
Telephone: (703) 236-6080
Facsimile: (702) 312-6666
E-mail: astadnicki@antonelli.com
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